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FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP
901 NEW YORK AVENUE, NW
WASHINGTON, DC 20001-4413

EXAMINER	
KIM, HEE-YONG	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/585,691	FUKUSHIMA ET AL.	
	Examiner	Art Unit	
	HEE-YONG KIM	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 July 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/10/2006, 9/13/2006, and 9/28/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a) because they fail to show th e longitudinal axis 302 (pp.14, line 22), and viewing zones 512 and 514 (pp.17, line 1-6) as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding **claim1**, it cites "a viewing zone adjusting unit that adjusts the viewing zone by shifting the viewing zone in a horizontal direction of the two-dimensional image display screen by shifting the parallax information disposed on each pixel of the two-dimensional image display screen in the vertical direction by pixel. It is not clear whether adjusting viewing zone both directions - horizontally and vertically, or generating image by shifting vertically to show the view which could have been made by horizontal shift. For the prosecution of the application, the latter interpretation is chosen.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 1-12, 14-19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukushima (US 2005/0,259,323) in view of Doudnikov (US 2002/0,006,213) (hereafter reference as Doudnikov).

Regarding **claim 1**, Fukushima discloses Three-Dimensional Image Display Device. Specifically Fukushima discloses A three-dimensional image display device (three dimensional image display device, paragraph 18), comprising:
a two-dimensional image display screen (two-dimensional image display, paragraph 5) having color filters (color filter, paragraph 95) in which each color is disposed on sub-pixels (RGB sub-pixels, paragraph 25) obtained by dividing one pixel in a vertical direction (three columns, paragraph 25) and same color (RGB sub-pixels, paragraph 25) is disposed on each column of sub-pixels (three columns, paragraph 25) ;
an optical plate (optical plate, paragraph 18) having an exit pupil (exit pupil, paragraph 18), the exit pupil being provided for making a viewing zone different for each pixel (parallax number assignment shown in Fig.6A and 6B) and having a longitudinal axis (longitudinal axis, paragraph 62) disposed as to be
inclined from a vertical direction (Y direction in Fig.2) of the two-dimensional image display screen at a degree (θ) (θ≠0, -45°< θ <45°) (Fig.2, θ≠0, paragraph 63, θ=arc tan(1/n) (if n=1, θ=45°), paragraph 68, θ can be positive (down right) or negative (down left)),
the viewing zone (View established with same parallax reference number in Fig 6A and 6B) being a region in which parallax information (parallax information, paragraph 16) displayed on the two-dimensional image display screen is observed.

However, Fukushima fails to disclose a viewing zone adjusting unit that adjusts the viewing zone by shifting the viewing zone in a horizontal direction of the two-dimensional image display screen by shifting the parallax information disposed on each pixel of the two-dimensional image display screen in the vertical direction by pixel.

In the analogous field of endeavor, Doudnikov discloses Apparatus and Method for Displaying Three Dimensional Image. Specifically Doudnikov discloses detecting observer's position and adjusting a viewing zone of the three dimensional image (paragraph 23), in order to regenerate image according to the observer's move (abstract).

However, Fukushima and Doudnikov still fails to disclose a viewing zone adjusting unit that adjusts the viewing zone by shifting the viewing zone in a horizontal direction of the two-dimensional image display screen by shifting the parallax information disposed on each pixel of the two-dimensional image display screen in the vertical direction by pixel.

Fukushima further discloses 16 parallax information distributions over the pixel at Fig.6A and parallax number 1 view is indicated by dashed line. If the observer shift right to left by one pixel horizontally (3 sub-pixels), then the observer see the parallax information number 5 (4^{th} position in the first row at Fig.6A). It would have been obvious that the same view (reference number 5) would be obtained by redrawing the first row to extend the last row of Fig.6A because the dashed line will extend the newly added row at the parallax number 5. It means that the view which would be obtained by one pixel horizontal shift of the display according to observer's movement can be established by

shifting display vertically down by 4 lines. So one vertical line shift is equivalent to ¼ horizontal pixel shift.

Therefore, given this teaching, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Fukushima and Doudnikov by providing a viewing zone adjusting unit that adjusts the viewing zone by shifting the viewing zone in a horizontal direction of the two-dimensional image display screen by shifting the parallax information disposed on each pixel of the two-dimensional image display screen in the vertical direction by pixel, in order to fast re-generate 3-D image according to horizontal shift of observer. The Fukushima three-dimensional image display device, incorporating the Doudnikov detecting observer's position and adjusting a viewing zone accordingly, further incorporating shifting the viewing zone in a horizontal direction of the two-dimensional image display screen by shifting the parallax information disposed on each pixel of the two-dimensional image display screen in the vertical direction by pixel, has all the features of claim 1.

Regarding **claim 2**, it is obvious over the Fukushima three-dimensional image display device, incorporating the Doudnikov detecting observer's position and adjusting a viewing zone accordingly, further incorporating shifting the viewing zone in a horizontal direction of the two-dimensional image display screen by shifting the parallax information disposed on each pixel of the two-dimensional image display screen in the vertical direction by pixel, as applied to claim 1, *wherein the viewing zone adjusting unit shifts the viewing zone in the horizontal direction by further shifting the parallax*

information in the horizontal direction by pixel, because more than one pixel horizontal shift can be realized by combination of vertical and horizontal shift.

Regarding **claim 3**, the Fukushima three-dimensional image display device, incorporating the Doudnikov detecting observer's position and adjusting a viewing zone accordingly, further incorporating shifting the viewing zone in a horizontal direction of the two-dimensional image display screen by shifting the parallax information disposed on each pixel of the two-dimensional image display screen in the vertical direction by pixel, as applied to claim 1, *further comprising: a shift direction determining unit that determines whether to shift the parallax information in the vertical direction or the horizontal direction* (as shown above claim 1, if less or equal to one pixel horizontal shift, then shift vertical direction (4 vertical pixel shift for one horizontal pixel) , otherwise shift horizontal direction), according to a shift amount of the viewing zone to be shifted by the viewing zone adjusting unit (Doudnikov: Adjusting viewing zone), *wherein the viewing zone adjusting unit shifts the parallax information in the shift direction by the number of pixels* (pixel shift as decided above) *according to the shift amount*.

Regarding **claim 4**, the Fukushima three-dimensional image display device, incorporating the Doudnikov detecting observer's position and adjusting a viewing zone accordingly, further incorporating shifting the viewing zone in a horizontal direction of the two-dimensional image display screen by shifting the parallax information disposed on each pixel of the two-dimensional image display screen in the vertical direction by pixel, as applied to claim 1, discloses *wherein the longitudinal axis of the exit pupil of*

the optical plate is disposed in a direction inclined from the vertical direction of the two-dimensional image display screen at a degree (-45°< θ < 0°) (down right direction as Fukushima: Fig.2)*, and*

the viewing zone adjusting unit shifts the parallax information from top to bottom in the vertical direction by pixel, when shifting the viewing zone from a right side to a left side when viewed from an observer side in the horizontal direction of the two-dimensional image display screen (see the above claim 1)

Regarding **claim 5**, the Fukushima three-dimensional image display device, incorporating the Doudnikov detecting observer's position and adjusting a viewing zone accordingly, further incorporating shifting the viewing zone in a horizontal direction of the two-dimensional image display screen by shifting the parallax information disposed on each pixel of the two-dimensional image display screen in the vertical direction by pixel, as applied to claim 1, discloses the claimed invention as explained as follows. The examiner maintains that claim 5 is obvious over claim 4. In the claim 4 when there is right to left horizontal observer's shift, there is top to bottom vertical adjustment. Therefore, it is obvious that in the opposite case when there is left to right movement, there should be opposite vertical adjustment(bottom to top).

Regarding **claim 6**, the Fukushima three-dimensional image display device, incorporating the Doudnikov detecting observer's position and adjusting a viewing zone accordingly, further incorporating shifting the viewing zone in a horizontal direction of the two-dimensional image display screen by shifting the parallax information disposed on each pixel of the two-dimensional image display screen in the vertical direction by

pixel, as applied to claim 1, discloses the claimed invention as explained as follows. The examiner maintains that claim 6 is an obvious variation of claim 4. In the claim 4 when there is right to left horizontal observer's shift with negative θ , there is top to bottom vertical adjustment. Therefore, it is obvious that in the opposite case (positive θ), there should be opposite vertical adjustment(bottom to top).

Regarding **claim 7**, the Fukushima three-dimensional image display device, incorporating the Doudnikov detecting observer's position and adjusting a viewing zone accordingly, further incorporating shifting the viewing zone in a horizontal direction of the two-dimensional image display screen by shifting the parallax information disposed on each pixel of the two-dimensional image display screen in the vertical direction by pixel, as applied to claim 1, discloses the claimed invention as explained as follows. The examiner maintains that claim 7 is obvious variation of claim 6. In the claim 6 when there is right to left horizontal observer's shift, there is bottom to top vertical adjustment. Therefore, it is obvious that in the opposite case (left to right observer's shift), there should be opposite vertical adjustment (top to bottom).

Regarding **claim 8**, the Fukushima three-dimensional image display device, incorporating the Doudnikov detecting observer's position and adjusting a viewing zone accordingly, further incorporating shifting the viewing zone in a horizontal direction of the two-dimensional image display screen by shifting the parallax information disposed on each pixel of the two-dimensional image display screen in the vertical direction by pixel, as applied to claim 1, discloses further comprising: an viewing position displacement detecting unit (Doudnikov: head position detector 34, Fig.3) that detects

an viewing position displacement amount which is a displacement amount between an viewing position (screen 32, Fig.3) on which a three-dimensional image displayed on the three-dimensional image display device should be observed and an actual position (head position, paragraph 24) of an observer; and an viewing zone shift amount determining unit (incorporating shifting the viewing zone in a horizontal direction of the two-dimensional image display screen by shifting the parallax information disposed on each pixel of the two-dimensional image display screen in the vertical direction by pixel) that determines a shift amount of the viewing zone based on the viewing position displacement amount, wherein the viewing zone adjusting unit (Doudnikov: adjusting a viewing zone, paragraph 23) shifts the viewing zone by the shift amount.

Regarding **claim 9**, the Fukushima three-dimensional image display device, incorporating the Doudnikov detecting observer's position and adjusting a viewing zone accordingly, further incorporating shifting the viewing zone in a horizontal direction of the two-dimensional image display screen by shifting the parallax information disposed on each pixel of the two-dimensional image display screen in the vertical direction by pixel, as applied to claim 8, discloses further comprising: the viewing position holding unit that holds the viewing position, wherein the viewing position displacement detecting unit recognizes a position of the observer by image recognition, and detects a difference value between the recognized position of the observer and the viewing position held by the viewing position holding unit as the viewing position displacement amount, because Doudnikov discloses head tracking system 33 (Fig.3) which inherently holds the past

position and compare the current position against it, in order to track the observer's movement.

Regarding **claim 10**, the Fukushima three-dimensional image display device, incorporating the Doudnikov detecting observer's position and adjusting a viewing zone accordingly, further incorporating shifting the viewing zone in a horizontal direction of the two-dimensional image display screen by shifting the parallax information disposed on each pixel of the two-dimensional image display screen in the vertical direction by pixel, as applied to claim 8, discloses wherein the viewing position displacement detecting unit (Doudnikov: viewing zone adjustment engine 35, Fig.3) detects the viewing position displacement amount (calculated signal, paragraph 50) in the horizontal direction of the two-dimensional image display screen, and the viewing zone shift amount determining unit determines the shift amount (further incorporating shifting the viewing zone in a horizontal direction of the two-dimensional image display screen by shifting the parallax information disposed on each pixel of the two-dimensional image display screen in the vertical direction by pixel) of the viewing zone based on the viewing position displacement amount in the horizontal direction.

Regarding **claim 11**, the Fukushima three-dimensional image display device, incorporating the Doudnikov detecting observer's position and adjusting a viewing zone accordingly, further incorporating shifting the viewing zone in a horizontal direction of the two-dimensional image display screen by shifting the parallax information disposed on each pixel of the two-dimensional image display screen in the vertical direction by pixel, as applied to claim 8, discloses wherein

the viewing position displacement detecting unit (Doudnikov: viewing zone adjustment engine 35, Fig.3) detects the viewing position displacement amount in the vertical direction (vertical direction, paragraph 20) of the two-dimensional image display screen, and the viewing zone shift amount determining unit determines the shift amount of the viewing zone (same vertical displacement as viewing position displacement) based on the viewing position displacement amount in the vertical direction.

Regarding **claim 12**, the Fukushima three-dimensional image display device, incorporating the Doudnikov detecting observer's position and adjusting a viewing zone accordingly, further incorporating shifting the viewing zone in a horizontal direction of the two-dimensional image display screen by shifting the parallax information disposed on each pixel of the two-dimensional image display screen in the vertical direction by pixel, as applied to claim 8, discloses further comprising:

an inclination detecting unit that detects an inclination (longitudinal axis inclined from a vertical direction, Fig.2) of the two-dimensional image display screen; and a viewing zone shift amount determining unit that determines the shift amount of the viewing zone based on the inclination (further incorporating shifting the viewing zone in a horizontal direction of the two-dimensional image display screen by shifting the parallax information disposed on each pixel of the two-dimensional image display screen in the vertical direction by pixel), wherein the viewing zone adjusting unit (Doudnikov detecting observer's position and adjusting a viewing zone) shifts the viewing zone by the shift amount.

Regarding **claim 14**, the Fukushima three-dimensional image display device, incorporating the Doudnikov detecting observer's position and adjusting a viewing zone accordingly, further incorporating shifting the viewing zone in a horizontal direction of the two-dimensional image display screen by shifting the parallax information disposed on each pixel of the two-dimensional image display screen in the vertical direction by pixel, as applied to claim 1, discloses all the features of the claimed invention, because the combination of Fukushima and Doudnikov teaches line shifting vertically (see claim 1) and therefore the first few lines before the original first lines appears in the re-constructed image are not proper information (*surplus*) and therefore they can be *disposed as black*.

Regarding **claim 15**, the Fukushima three-dimensional image display device, incorporating the Doudnikov detecting observer's position and adjusting a viewing zone accordingly, further incorporating shifting the viewing zone in a horizontal direction of the two-dimensional image display screen by shifting the parallax information disposed on each pixel of the two-dimensional image display screen in the vertical direction by pixel, as applied to claim 1, discloses all the features of the claimed invention, because the combination of Fukushima and Doudnikov teaches line shifting vertically (see claim 1) and therefore the first few lines before the original first lines appears in the re-constructed image are not proper information (*surplus*) and therefore they can be *disposed as black*.

Regarding **claim 16**, the Fukushima three-dimensional image display device, incorporating the Doudnikov detecting observer's position and adjusting a viewing zone

accordingly, further incorporating shifting the viewing zone in a horizontal direction of the two-dimensional image display screen by shifting the parallax information disposed on each pixel of the two-dimensional image display screen in the vertical direction by pixel, as applied to claim 1, discloses further comprising:

a parallax information holding unit that holds the parallax information (storing respective parallax image data elements, paragraph 128), a size of which is larger than a size of the two-dimensional image display screen, wherein the two-dimensional image display screen (two-dimensional image display, paragraph 5) displays the parallax information held by the parallax information holding unit.

Regarding **claim 17**, the Fukushima three-dimensional image display device, incorporating the Doudnikov detecting observer's position and adjusting a viewing zone accordingly, further incorporating shifting the viewing zone in a horizontal direction of the two-dimensional image display screen by shifting the parallax information disposed on each pixel of the two-dimensional image display screen in the vertical direction by pixel, as applied to claim 1, discloses further comprising: the parallax information, the size of which is larger than the size of the two-dimensional image display screen, wherein the parallax information holding unit (storing respective parallax image data elements, paragraph 128) holds the parallax information prepared by the parallax information preparing unit (incorporating the Doudnikov detecting observer's position and adjusting a viewing zone accordingly, further incorporating shifting the viewing zone in a horizontal direction of the two-dimensional image display screen by shifting the

parallax information disposed on each pixel of the two-dimensional image display screen in the vertical direction by pixel).

Regarding **claim 18**, the claimed invention is a method claim corresponding to the apparatus claim 1. Therefore, it is rejected for the same reason as claim1.

Regarding **claim 19**, the claimed invention is a computer readable medium claim corresponding to the apparatus claim 1. Therefore, it is rejected for the same reason as claim1.

5. **Claim 13** is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukushima in view of Doudnikov, and further in view of Kume (US 5,617,490) (hereafter reference as Kume).

Regarding **claim 13**, Fukushima and Doudnikov discloses everything claimed as applied above (see claim 1). However, Fukushima and Doudnikov fail to disclose further comprising: an optical plate position displacement amount
obtaining unit that obtains from outside an optical plate
position displacement amount which is a displacement amount
between the two-dimensional image display screen and the
optical plate; and
a viewing zone shift amount determining unit that determines the shift amount of the viewing zone based on the optical plate position displacement amount, wherein
the viewing zone adjusting unit shifts the viewing
zone by the viewing zone shift amount.

In analogous field of endeavor, Kume discloses Camera System with Neutral Network Compensation for Measuring 3-D Position. Kume specifically discloses focus point (x_i, y_i) on imaging plane according to pin-hole model for given object shift (Fig.3, Eq.2 and Eq.3), in order to detect image points according to object shift (col.4, line 11-20)

$x_i = f \cdot x_c / z_c$ (Kume: Eq.2)

where, f is focal length, x_c is horizontal shift of object, z_c is distance to object. If we applying this method to Fukushima display system, focus corresponds to a *displacement amount between the two-dimensional image display screen and the optical plate,* x_i corresponds to *Viewing zone shift amounts.*

Therefore, given this teaching, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Fukushima and Doudnikov by providing a shift of image plane according to pin-hole model based on observer's shift, displacement between optical plate and screen, and the distance to the observer, in order to detect image points according to object shift. The Fukushima three-dimensional image display device, incorporating the Doudnikov detecting observer's position and adjusting a viewing zone accordingly, further incorporating shifting the viewing zone in a horizontal direction of the two-dimensional image display screen by shifting the parallax information disposed on each pixel of the two-dimensional image display screen in the vertical direction by pixel, and further incorporating the Kume detecting a shift of image plane according to pin-hole model based on observer's shift, displacement between

optical plate and screen, and the distance to the observer, has all the features of claim 13.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Berkel (US 6,064,424) discloses Autostereoscopic Display Apparatus. Chiabrera (US 6,329,963) discloses Three-Dimensional Display System: Apparatus and Method.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HEE-YONG KIM whose telephone number is (571)270-3669. The examiner can normally be reached on Monday-Thursday, 8:00am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on 571-272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/HEE-YONG KIM/
Examiner, Art Unit 4192

/Andy S. Rao/
Primary Examiner, Art Unit 2621
April 23, 2010